

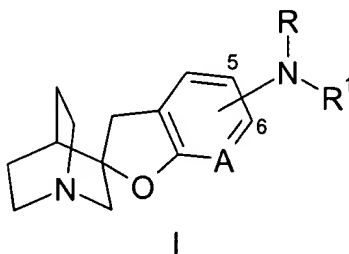
Amendments to the Claims:

This listing of claims will replace all previous versions, and listings, of claims in this application.

Listing of Claims:

Claims 1 - 43 (cancelled).

Claim 44 (currently amended) A compound of formula I,



wherein

NRR^1 is attached at the 5- or 6-position of the furopyridine ring;

R is hydrogen, C_1 - C_4 alkyl, or COR^2 ;

R^1 is $(\text{CH}_2)_n\text{Ar}$, $\text{CH}_2\text{CH}=\text{CHAr}$, or $\text{CH}_2\text{C}\equiv\text{CAr}$;

n is 0 to 3;

A is N;

Ar is a 5- or 6-membered aromatic or heteroaromatic ring which contains zero to four nitrogen atoms, zero to one oxygen atoms, and zero to one sulfur atoms; or:

Ar is an 8-, 9- or 10-membered fused aromatic or heteroaromatic ring system containing zero to four nitrogen atoms, zero to one oxygen atoms, and zero to one sulfur atoms; any of which may optionally be substituted with one to two substituents independently selected from: halogen, trifluoromethyl, or C_1 - C_4 alkyl;

R^2 is hydrogen, C_1 - C_4 alkyl; C_1 - C_4 alkoxy; or a phenyl ring optionally substituted with one to three of the following substituents: halogen, C_1 - C_4 alkyl, C_2 - C_4 alkenyl, C_2 - C_4 alkynyl, OH, OC_1 - C_4 alkyl, CO_2R^5 , $-\text{CN}$, $-\text{NO}_2$, $-\text{NR}^3\text{R}^4$, or $-\text{CF}_3$;

R^3 , R^4 and R^5 are independently hydrogen; C_1 - C_4 alkyl; or phenyl ring optionally substituted with one to three of the following substituents: halogen, C_1 - C_4 alkyl, C_2 - C_4 alkenyl, C_2 - C_4 alkynyl, OH, OC_1 - C_4 alkyl, -CN; -NO₂, or -CF₃; or an enantiomer thereof, or a pharmaceutically acceptable salt[[s]] thereof, with the proviso that said compound is not 5'-N-benzylaminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine].

Claim 45 (currently amended) A compound according to claim 44, wherein R_1 is $CH_2CH=CHAr$; or an enantiomer thereof, or a pharmaceutically acceptable salt[[s]] thereof.

Claim 46 (currently amended) A compound according to claim 44, wherein R_1 is $CH_2C\equiv CAr$; or an enantiomer thereof, or a pharmaceutically acceptable salt[[s]] thereof.

Claim 47 (currently amended) A compound according to claim 44, wherein R_1 is $(CH_2)_nAr$; or an enantiomer thereof, or a pharmaceutically acceptable salt[[s]] thereof.

Claim 48 (currently amended) A compound according to claim 44, wherein Ar is selected from ~~the group: 1-, or 2-naphthyl; 2-, 3-, 4-, 5-, 6-, 7-, or 8-quinolyl; 1-, 3-, 4-, 5-, 6-, 7-, or 8-isoquinolyl; 2-, 4-, 5-, 6-, or 7-benzoxazolyl; and 3-, 4-, 5-, 6-, or 7-benzisoxazolyl;~~
1-, or 2-naphthyl,
2-, 3-, 4-, 5-, 6-, 7-, or 8-quinolyl,
1-, 3-, 4-, 5-, 6-, 7-, or 8-isoquinolyl,
2-, 4-, 5-, 6-, or 7-benzoxazolyl, or
3-, 4-, 5-, 6-, or 7-benzisoxazolyl,
or an enantiomer thereof, or a pharmaceutically acceptable salt[[s]] thereof.

Claim 49 (currently amended) A compound according to claim 44, wherein R³, R⁴ and R⁵ are independently hydrogen, or C₁-C₄ alkyl;
or an enantiomer thereof, [[and]]or a pharmaceutically acceptable salt^{[[s]]} thereof.

Claim 50 (previously presented) A compound according to claim 44, wherein Ar is an heteroaromatic ring.

Claim 51 (previously presented) A compound according to claim 44, wherein n is 1.

Claim 52 (previously presented) A compound according to any one of claim 51, wherein R is hydrogen and Ar is an heteroaromatic ring.

Claim 53 (previously presented) A compound according to claim 44, wherein R is hydrogen.

Claim 54. (currently amended) A compound according to claim 44, said compound being:
R-(-)-5'-(3-pyridylmethyl) aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine], or
R-(-)-5'-(4-pyridylmethyl) aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];
or an enantiomer thereof, [[and]]or a pharmaceutically acceptable salt^{[[s]]} thereof.

Claim 55 (currently amended) A compound according to claim 44, said compound being:

R-(–)-5'-(2-pyridylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-(3-pyridylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-(4-pyridylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-(2-furanylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-(3-furanylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-(2-thienylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-(2-imidazolylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(4-methoxyphenylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(4-chlorophenylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(4-methylphenylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(3,4-dichlorophenylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-acetyl- N-(phenylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-methyl-N-(phenylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

(R)-(–)-5'-N-(3-pyridyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

(R)-(–)-6'-N-(phenylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(3-thienylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(2-phenylethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(3-phenylpropyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(quinolin-3-ylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(quinolin-4-ylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(1,4-benzodioxan-6-ylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(imidazol-4-ylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(*trans*-3-phenylprop-2-enyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(thiazol-2-ylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(3-methylphenylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(2-chlorophenylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(3-chlorophenylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(3-phenylpropynyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(3-hydroxyphenylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(4-hydroxyphenylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-[*trans*-3-(4-pyridinyl)prop-2-enyl]aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-acetyl-N-(3-thienylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-methyl-N-(4-pyridylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

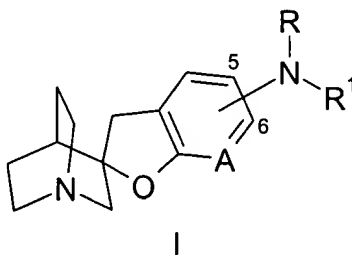
R-(–)-5'-N-methyl-N-(3-pyridylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine], or

R-(–)-5'-N-(2-hydroxyethyl)-N-(3-thienylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

or an enantiomer thereof, [[and]]or a pharmaceutically acceptable salt[[s]] thereof.

Claim 56 (previously presented) A pharmaceutical composition comprising a compound according to claim 44, in admixture with an inert pharmaceutically acceptable diluent or carrier.

Claim 57 (new) A compound of formula I,



wherein

NRR¹ is attached at the 5- or 6-position of the furopyridine ring;

R is hydrogen, C₁-C₄ alkyl, or COR²;

R¹ is (CH₂)_nAr, CH₂CH=CHAr, or CH₂C≡CAr;

n is 0, 1, 2 or 3;

A is N;

Ar is a 5- or 6-membered heteroaromatic ring which contains zero to four nitrogen atoms, zero to one oxygen atoms, and zero to one sulfur atoms which heteroaromatic ring is optionally

substituted with one to two substituents independently selected from: halogen, trifluoromethyl, or C₁-C₄ alkyl;

R² is hydrogen, C₁-C₄ alkyl; C₁-C₄ alkoxy; or a phenyl ring optionally substituted with one to three of the following substituents: halogen, C₁-C₄ alkyl, C₂-C₄ alkenyl, C₂-C₄ alkynyl, OH, OC₁-C₄ alkyl, CO₂R⁵, -CN, -NO₂, -NR³R⁴, or -CF₃;

R³, R⁴ and R⁵ are independently hydrogen; C₁-C₄ alkyl; or phenyl ring optionally substituted with one to three of the following substituents: halogen, C₁-C₄ alkyl, C₂-C₄ alkenyl, C₂-C₄ alkynyl, OH, OC₁-C₄ alkyl, -CN; -NO₂, or -CF₃;
or an enantiomer thereof, or a pharmaceutically-acceptable salt thereof.

Claim 58 (new) A compound according to claim 57, wherein R₁ is CH₂CH=CHAr.

Claim 59 (new) A compound according to claim 57, wherein R₁ is CH₂C≡CAr.

Claim 60 (new) A compound according to claim 57, wherein R₁ is (CH₂)_nAr.

Claim 61 (new) A compound according to claim 57, said compound being:

R-(-)-5'-(2-pyridylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(-)-5'-(3-pyridylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine], or

R-(-)-5'-(4-pyridylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(-)-5'-(2-furanylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-(3-furanylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-(2-thienylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-(2-imidazolylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

(R)-(–)-5'-N-(3-pyridyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(3-thienylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(imidazol-4-ylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-(thiazol-2-ylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-[*trans*-3-(4-pyridinyl)prop-2-enyl]aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(–)-5'-N-acetyl-N-(3-thienylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

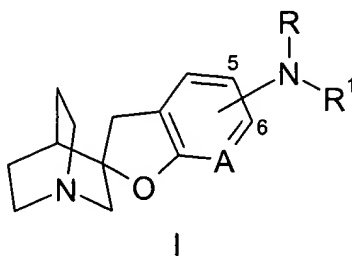
R-(–)-5'-N-methyl-N-(4-pyridylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine], or

R-(–)-5'-N-methyl-N-(3-pyridylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

or an enantiomer thereof, or a pharmaceutically-acceptable salt thereof.

Claim 62 (new) A pharmaceutical composition comprising a compound according to claim 57, in admixture with an inert pharmaceutically-acceptable diluent or carrier.

Claim 63 (New) A compound of formula I,



wherein

NRR^1 is attached at the 5- or 6-position of the furopyridine ring;

R is hydrogen, $\text{C}_1\text{-C}_4$ alkyl, or COR^2 ;

R^1 is $(\text{CH}_2)_n\text{Ar}$, $\text{CH}_2\text{CH}=\text{CHAr}$, or $\text{CH}_2\text{C}\equiv\text{CAr}$;

n is 0 to 3;

A is N;

Ar is an 8-, 9- or 10-membered fused aromatic or heteroaromatic ring system containing zero to four nitrogen atoms, zero to one oxygen atoms, and zero to one sulfur atoms which fused aromatic or heteroaromatic ring system is optionally substituted with one to two substituents independently selected from: halogen, trifluoromethyl, or $\text{C}_1\text{-C}_4$ alkyl;

R^2 is hydrogen, $\text{C}_1\text{-C}_4$ alkyl; $\text{C}_1\text{-C}_4$ alkoxy; or a phenyl ring optionally substituted with one to three of the following substituents: halogen, $\text{C}_1\text{-C}_4$ alkyl, $\text{C}_2\text{-C}_4$ alkenyl, $\text{C}_2\text{-C}_4$ alkynyl, OH, $\text{OC}_1\text{-C}_4$ alkyl, CO_2R^5 , $-\text{CN}$, $-\text{NO}_2$, $-\text{NR}^3\text{R}^4$, or $-\text{CF}_3$;

R^3 , R^4 and R^5 are independently hydrogen; $\text{C}_1\text{-C}_4$ alkyl; or phenyl ring optionally substituted with one to three of the following substituents: halogen, $\text{C}_1\text{-C}_4$ alkyl, $\text{C}_2\text{-C}_4$ alkenyl, $\text{C}_2\text{-C}_4$ alkynyl, OH, $\text{OC}_1\text{-C}_4$ alkyl, $-\text{CN}$; $-\text{NO}_2$, or $-\text{CF}_3$;

or an enantiomer thereof, or a pharmaceutically-acceptable salt thereof.

Claim 64 (New) A compound according to claim 63, wherein R_1 is $\text{CH}_2\text{CH}=\text{CHAr}$.

Claim 65 (New) A compound according to claim 63, wherein R_1 is $\text{CH}_2\text{C}\equiv\text{CAr}$.

Claim 66 (New) A compound according to claim 63, wherein R_1 is $(CH_2)_nAr$.

Claim 67 (new) A compound according to claim 63, said compound being:

R-(-)-5'-N-(quinolin-3-ylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

R-(-)-5'-N-(quinolin-4-ylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine], or

R-(-)-5'-N-(1,4-benzodioxan-6-ylmethyl)aminospiro[1-azabicyclo[2.2.2]octane-3,2'-(3'H)-furo[2,3-b]pyridine];

or an enantiomer thereof, or a pharmaceutically acceptable salt thereof.

Claim 68 (new) A compound according to claim 63, wherein Ar is selected from 1-, or 2-naphthyl,

2-, 3-, 4-, 5-, 6-, 7-, or 8-quinolyl,

1-, 3-, 4-, 5-, 6-, 7-, or 8-isoquinolyl,

2-, 4-, 5-, 6-, or 7-benzoxazolyl, or

3-, 4-, 5-, 6-, or 7-benzisoxazolyl,

or an enantiomer thereof, or a pharmaceutically acceptable salt thereof.

Claim 69 (new) A pharmaceutical composition comprising a compound according to claim 63, in admixture with an inert pharmaceutically-acceptable diluent or carrier.